Midea

Air conditioner

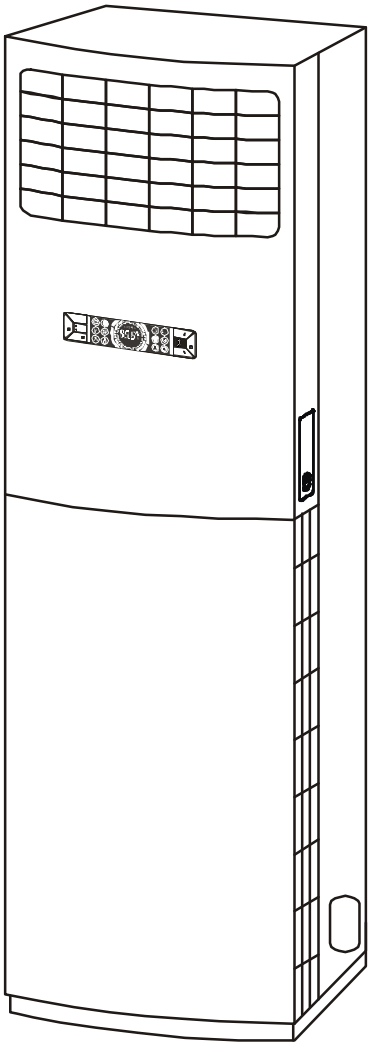
Floor Standing Type Air Conditioner

Technical & Service manual

Model:

MFJ-24ARN1-QB8

MFJ-48ARN1-RB6



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1 Safety Precautions

1.1 Precaution

To prevent injury to the user or other people and property damage, the following instructions must be followed.

Incorrect operation due to ignoring instruction will cause harm or damage.

Before service unit, be sure to read this service manual at first.

1.2 Installation

For electrical work, contact the dealer, seller, a qualified electrician, or an Authorized service center.

Do not disassemble or repair the product by yourself.

Sharp edges could cause injury, be especially careful of the case edges and the fins on the condenser and evaporator.

Be sure the installation area does not deteriorate with age.

Take care to ensure that power cable could not be pulled out or damaged during operation.

Do not place anything on the power cable.

Do not plug or unplug the power supply plug during operation.

Do not store or use flammable gas or combustible near the product.

When flammable gas leaks, turn off the gas and open a window for ventilation before turn the product on.

If strange sounds, or small or smoke comes from product. Turn the breaker off or disconnect the power supply cable as soon as possible.

When the product is soaked (flooded or submerged), contact an Authorized service center.

Be caution that water could not enter the product.

Turn the main power off when cleaning or maintaining the product.

When the product is not be used for a long time, disconnect the power supply plug or turn off the breaker.

1.3 Caution

Always check for gas (refrigerant) leakage after installation or repair of product.

Install the drain hose to ensure that water is drained away properly.

Keep level even when installing the product.

Do not install the product where the noise or hot air from the outdoor unit could damage the neighborhoods.

Use two or more people to lift and transport the product.

Do not install the product where it will be exposed to sea wind (salt spray) directly.

1.4 Operational

Do not expose the skin directly to cool air for long periods of time. (Do not sit in the draft).

Do not use the product for special purposes, such as preserving foods, works of art, etc. It is a consumer air conditioner, not a precision refrigerant system.

Do not block the inlet or outlet of air flow.

Use a soft cloth to clean. Do not use harsh detergents, solvents, etc.

Do not touch the metal parts of the product when removing the air filter. They are very sharp.

Do not step on pr put anything on the product. (outdoor units)

Always insert the filter securely. Clean the filter every two weeks or more often if necessary.

Do not insert hands or other object through air inlet or outlet while the product is operated.

Do not drink the water drained from the product.

Use a firm stool or ladder when cleaning or maintaining the product.

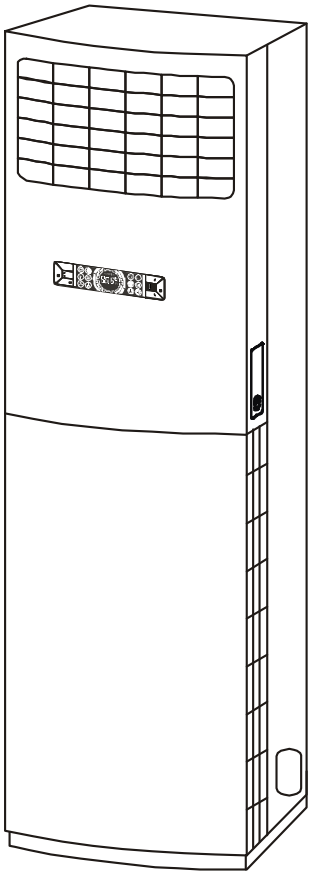
Replace the all batteries in the remote control with new ones of the same type. Do not mix old and mew batteries or different types of batteries.

Do not recharge or disassemble the batteries. Do not dispose of batteries in a fire.

If the liquid from the batteries gets onto your skin or clothes, wash it well with clean water. Do not use the remote of the batteries have leaked.

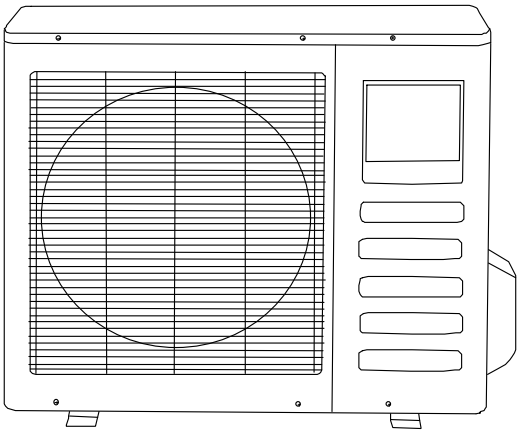
2 Out Dimensions

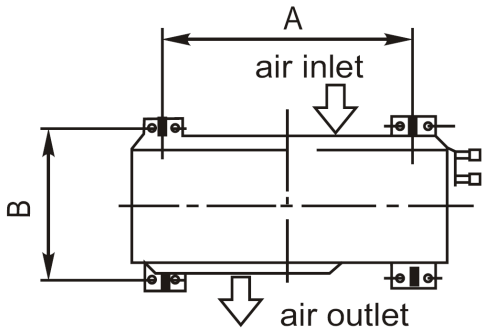
2.1 Indoor Unit



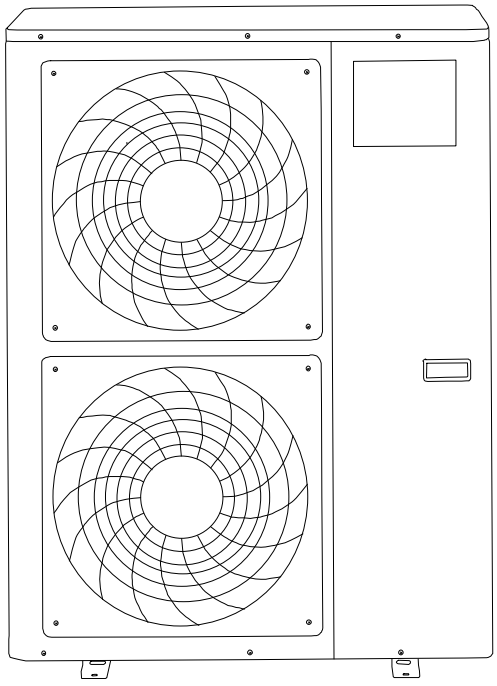
Dimension / Mode	Width (mm)	Height (mm)	Depth (mm)
24K	500	1700	290
48K	540	1825	410

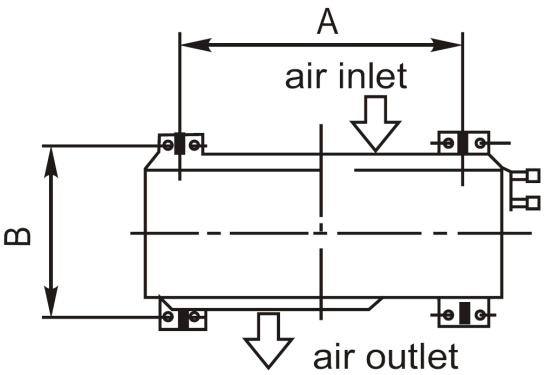
2.2 Outdoor Unit





Dimension / Mode	Width (mm)	Height (mm)	Depth (mm)	A (mm)	B (mm)
24K	840	695	335	560	335





Dimension / Mode	Width (mm)	Height (mm)	Depth (mm)	A (mm)	B (mm)
48K	940	1245	360	602	380

3 External view and display

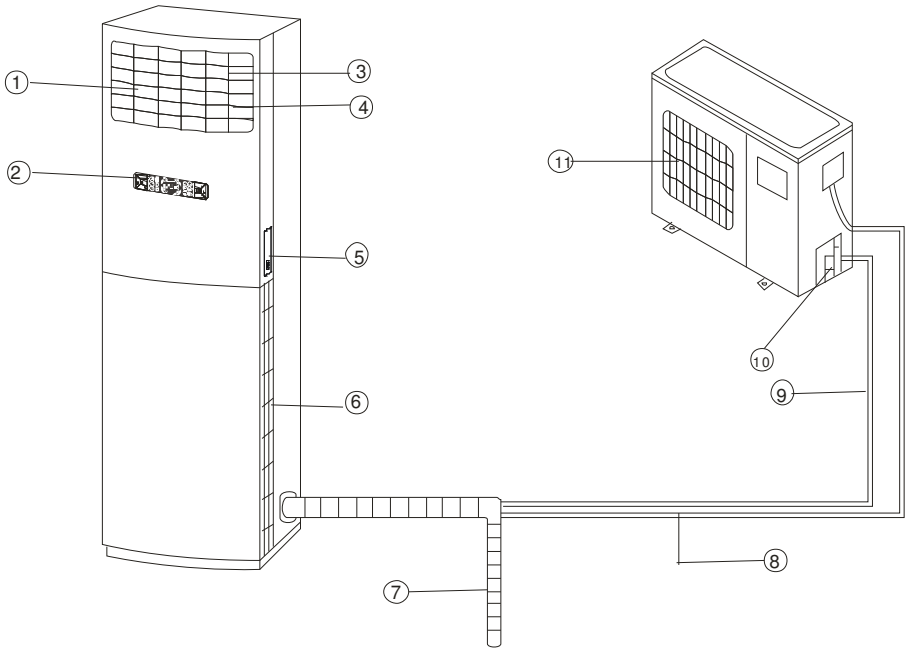
3.1 External view

Indoor unit

① Air outlet
② Operation panel
③ Horizontal airflow control louver
④ Vertical airflow control louver
⑤ Remote controller holder(on some models)
⑥ Air inlet(2 sides)

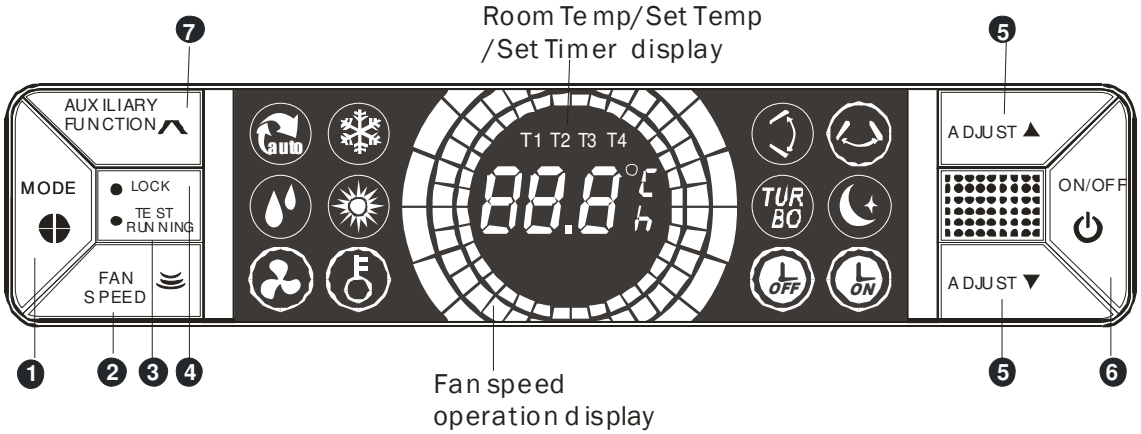
Outdoor unit

⑦ Drain pipe, vent pipe
⑧ Connection cable
⑨ Connection pipe
⑩ Refrigerant pipe port
⑪ Air outlet



Note: All the pictures in this manual are for explanation purpose only. They may be slightly different from the air conditioner you purchased(depend on model). The actual shape shall prevail.

3.2 Display panel

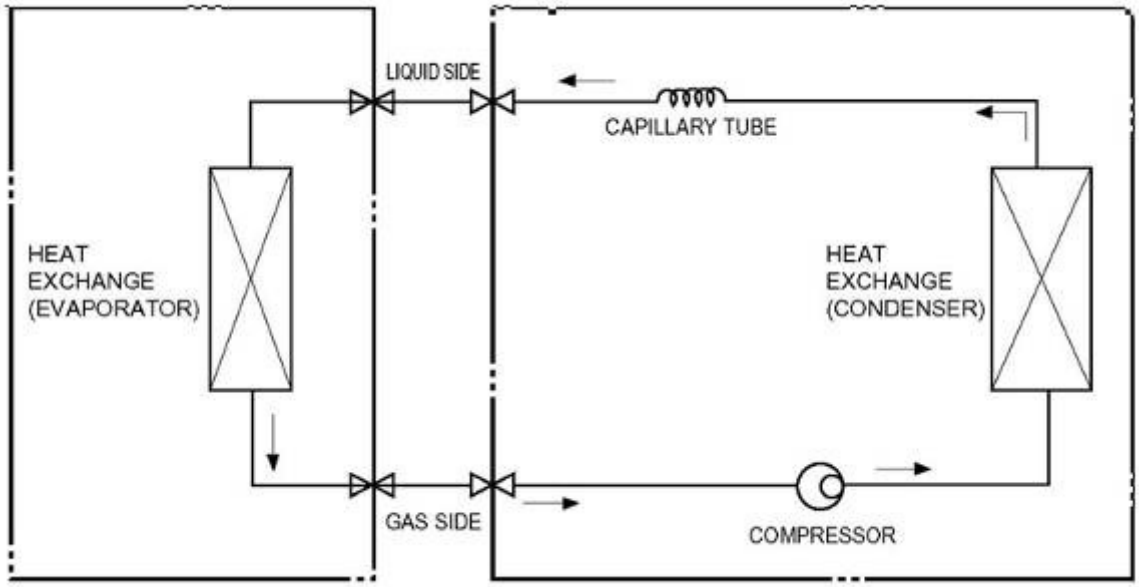


Indicators

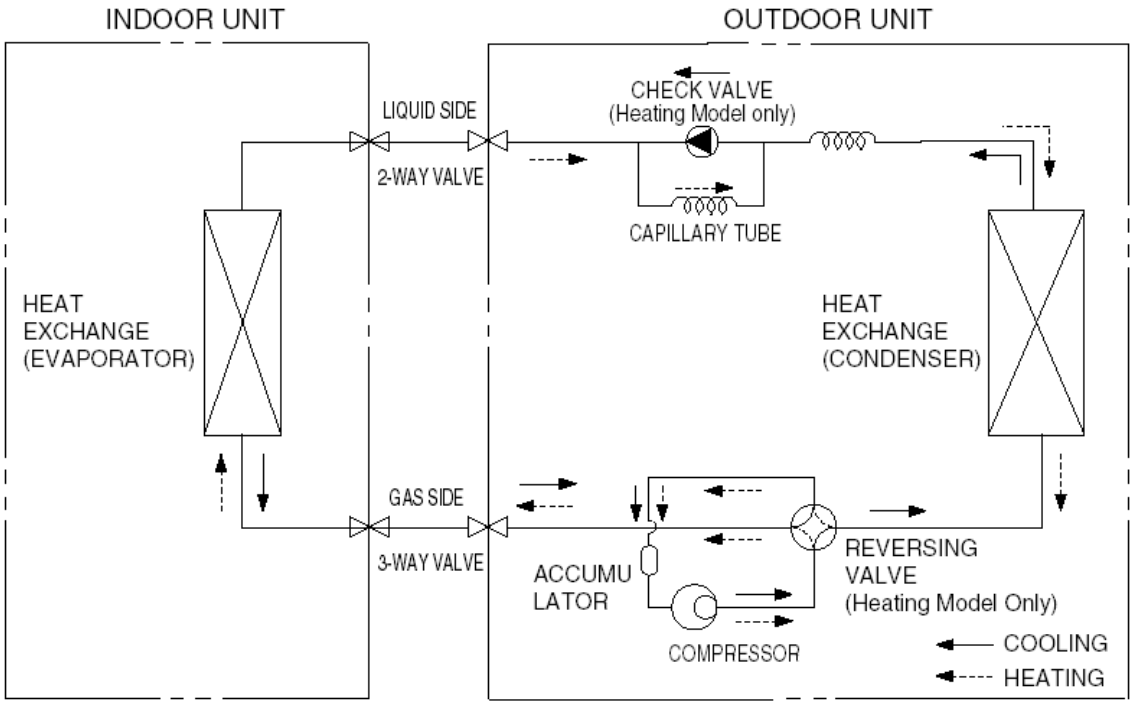
- Auto operation display
- Cooling operation display
- Dry operation display
- Heating operation display
- Fan operation display
- Vertical airflow display
- Horizontal airflow display
- Sleep operation display
- Turbo operation display
- On timer operation display
- Off timer operation display
- Lock operation display

4 Refrigerant cycle diagram

4.1 Cooling only



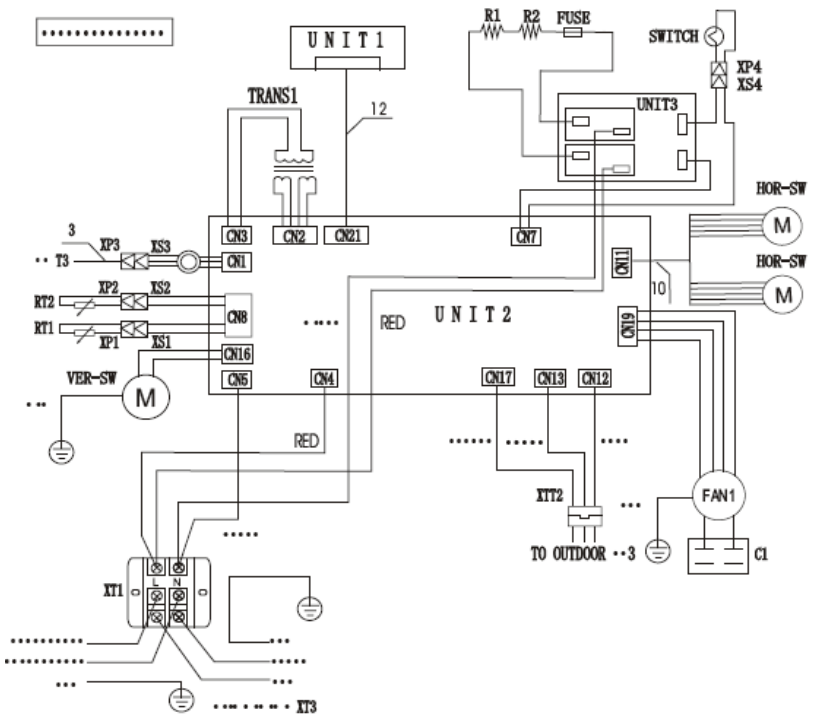
4.2 Heat pump mode



5 PCB drawing & wiring diagram

5.1 MFJ-24ARN1-QB8

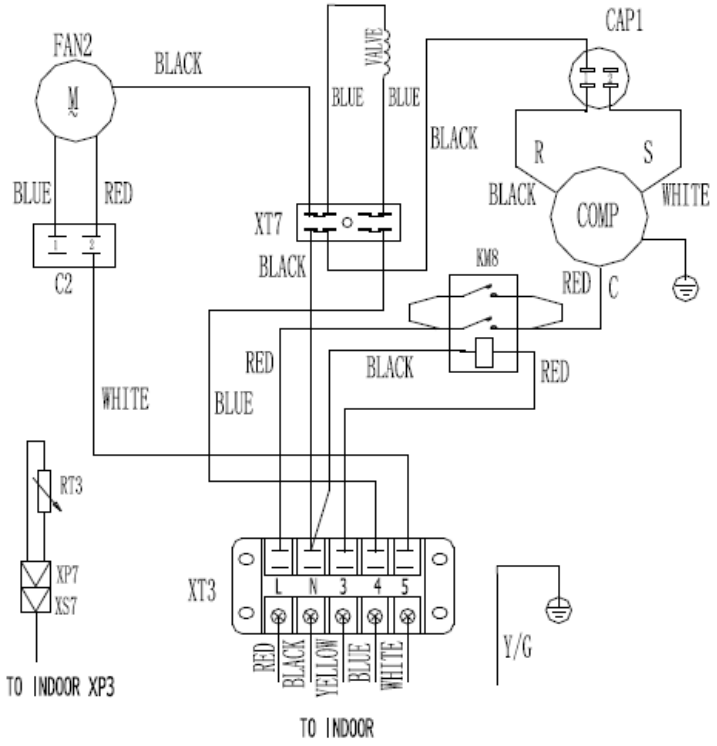
Indoor unit



WIRING DIAGRAM
INDOOR PART

CODE	PART NAME
UNIT1	DISPLAY BOARD
UNIT2	MAIN BOARD
FAN1	INDOOR FAN
C1	FAN CAPACITOR
TRANS1	TRANSFORMER
RT1	•••••••••••••••••••
RT2	•••••••••••••••••••
XT1	2-WAY TERMINAL
XS1-XS4	CONNECTORS
XP1-XP4	CONNECTORS
VER-SW	VERTICAL SWING MOTOR
XT2	CONNECTOR
HOR-SW	••••TAL SWING MOTOR
R1-R2	••••••••• •••••
UNIT3	•••••••••••••••
SWITCH	•••••••••••••••••
FUSE	•••••••••••••••••
CN1-CN5 CN7 CN8 CN11-CN13 CN16 CN19 CN21	•••••••••••••••

Outdoor unit

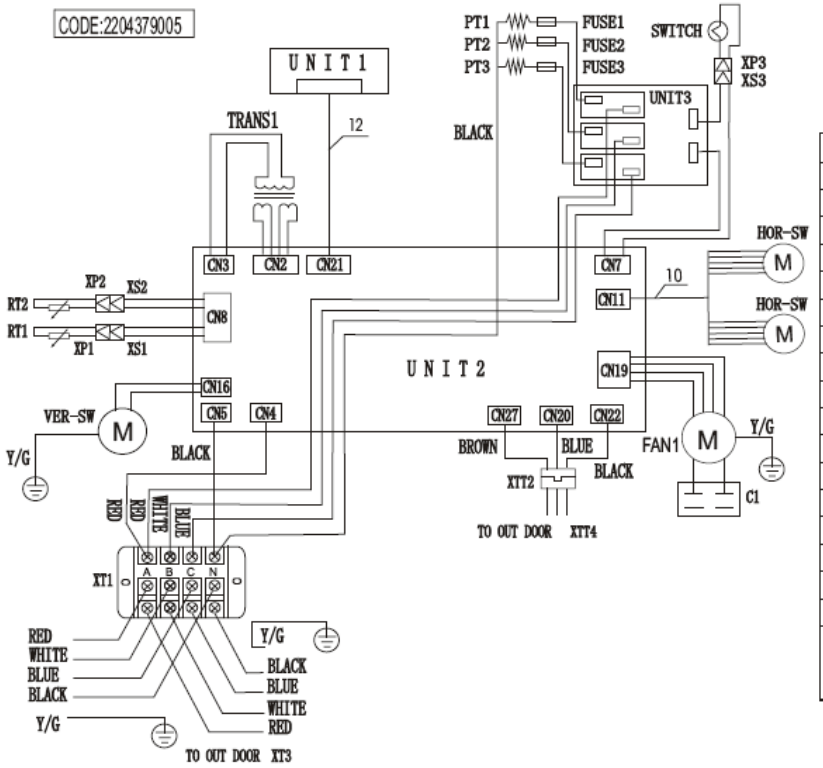


WIRING DIAGRAM
OUTDOOR PART

CODE	PART NAME
COMP	COMPRESSOR
CAP1	COMPRESSOR CAPACITOR
C2	OUTDOOR FAN CAPACITOR
FAN2	OUDOOR FAN
XT3	5-WAY TERMINAL
VALVE	REVERSING VALVE
XP7	CONNECTOR
XS7	CONNECTOR
RT3	PIPE TEMPERATURE SENSOR
XT7	MIDDLE TERMINAL
KM8	AC CONTACTOR

5.2 MFJ-48ARN1-RB6

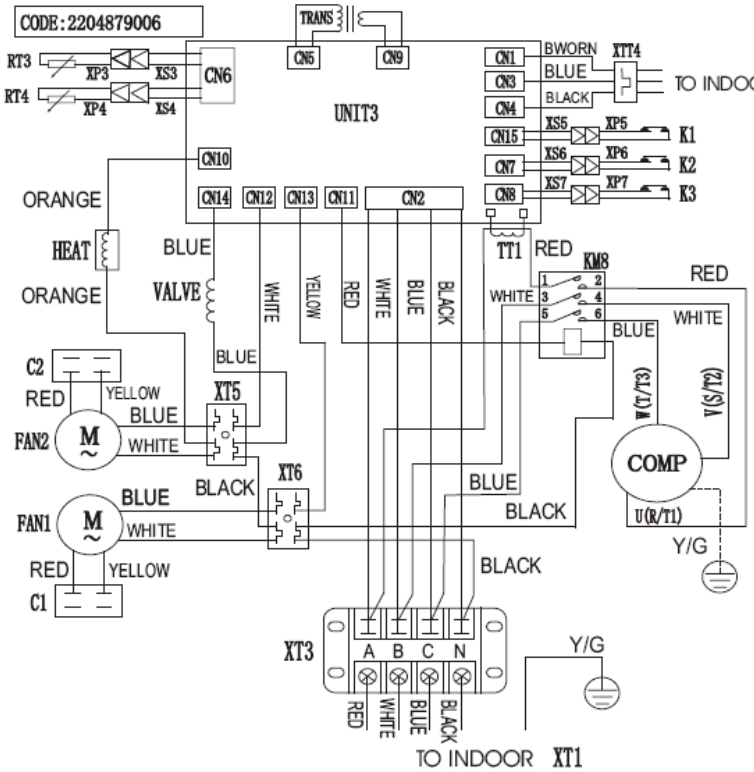
Indoor unit



WIRING DIAGRAM
INDOOR PART

CODE	PART NAME
UNIT1	DISPLAY BOARD
UNIT2	MAIN BOARD
FAN1	INDOOR FAN
C1	FAN CAPACITOR
TRANS1	TRANSFORMER
RT1	·····
RT2	·····
XT1	4-WAY TERMINAL
XS1-XS3	CONNECTORS
XP1-XP3	CONNECTORS
VER-SW	VERTICAL SWING MOTOR
XTT2	CONNECTOR
HOR-SW	·····TAL SWING MOTOR
PT1-PT3	····· ·····
UNIT3	····· ····· ·····
SWITCH	·····
FUSE1-FUSE3	·····
CN2-CN5 CN7 CN8 CN11 CN16 CN19-CN22	·····

Outdoor unit



WIRING DIAGRAM
OUTDOOR PART

CODE	PART NAME
UNIT3	····· ····
FAN1	····· ·····
FAN2	····· ·····
C1-C2	··· ·····
KM8	·· ·····
COMP	·····
XT3	····· ·····
XTT4	·····
XT5-XT6	·····
RT3	···· ····· ·····
RT4	····· ····· ·····
XP3-XP7	·····
XS3-XS7	·····
TT1	····· ·····
K1	····· ····· ·····
K2	····· ···· ····· ·····
K3	····· ··· ····· ·····
VALVE	····· ·····
HEAT	ELECTRIC HEATING STRING
TRANS	·····
CN1-CN15	··· ····· ·····

6 Installation detail

6.1 Installation place

6.1.1 Indoor Unit

A place which provides the spaces around the indoor unit as required above in the diagram.

A place where is no obstacle near the inlet and outlet area.

A place which can bear the weight of the indoor unit.

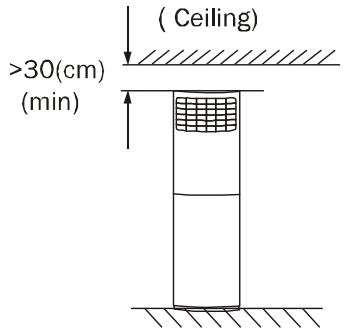
A place which allows the air filter to be removed downward.

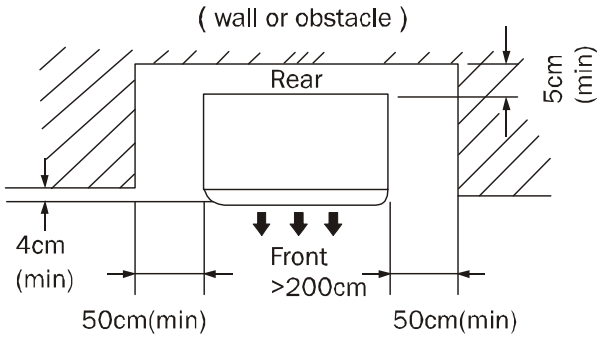
A place where the reception range is not exposed to direct sunlight.

In the center of the room where possible.

6.1.1.1 Please stand the unit in hard and flat ground;

Please reserve space for installation and maintenance.





6.1.1.2 Please check the elevation difference between the indoor unit and the outdoor unit, the length of the refrigerant pipe, and the curved places (bend) of the pipe are no more than the following numbers:Elevation difference: no more than 10 M (if the elevation difference between indoor and outdoor unit is more than 10 meters, it is recommended that the outdoor unit be placed above the indoor unit.)

Pipe length: no more than 20 M

Bends: no more than 5 places

6.1.2 Outdoor Unit

6.1.2.1 Before installing the outdoor unit, you should:

Select a place where no direct sunlight or other heat-radioactivity may reach. A sunshade is needed if it is unavoidable.

Select a place that is easy to connect indoor unit's pipe and electric wires.

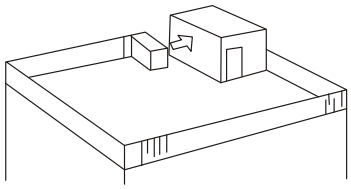
Avoid a place where combustible gas may leak or stay.

Keep it in mind that water may drain out of the outdoor unit while in "Heat" mode.

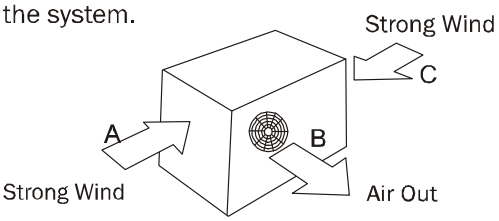
6.1.2.2 If the outdoor unit is to be installed on a roof or where no constructions are around, you should avoid hard wind blows directly to the air outlet, because it may cause trouble for air-flow shortage.

For example:

Let the air outlet face a wall (if there is one) with a distance about 300 centimeters between them.



Try to make the air outlet vertical to wind direction if it is known in the season you use the system.

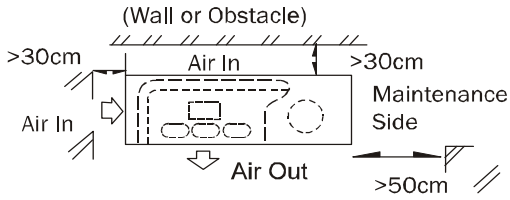


In directions Ⓐ Ⓑ Ⓒ leave open two of the three directions.

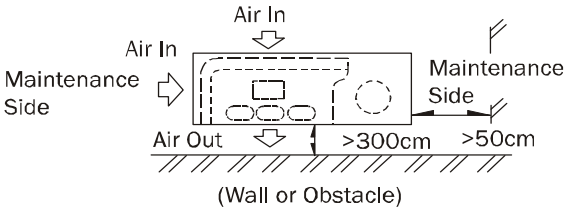
6.1.2.3 Reserve enough space for installation, maintenance and unit-functioning.

Remove as many obstacles as possible nearby.

When the air-in surface is facing a wall



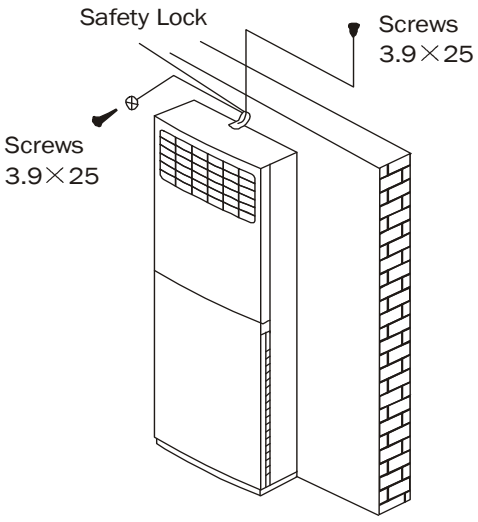
When the air-out surface is facing a wall

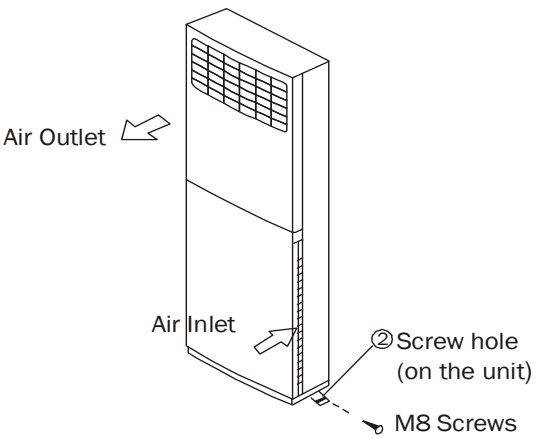


6.2 Installing

6.2.1 To prevent the indoor unit from falling, you must:

Pay full attention to the unit because its long outer shape makes it easy to fall;



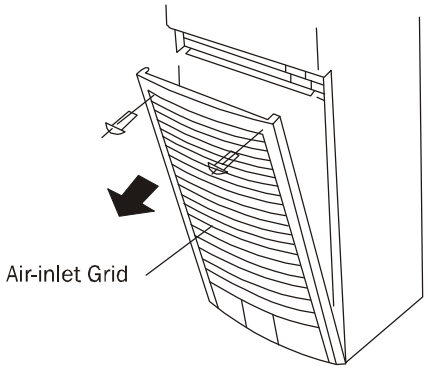


Firmly fix the unit to the wall and in the ground to avoid accidental falling.

6.2.2 Dismounting the air-inlet grid

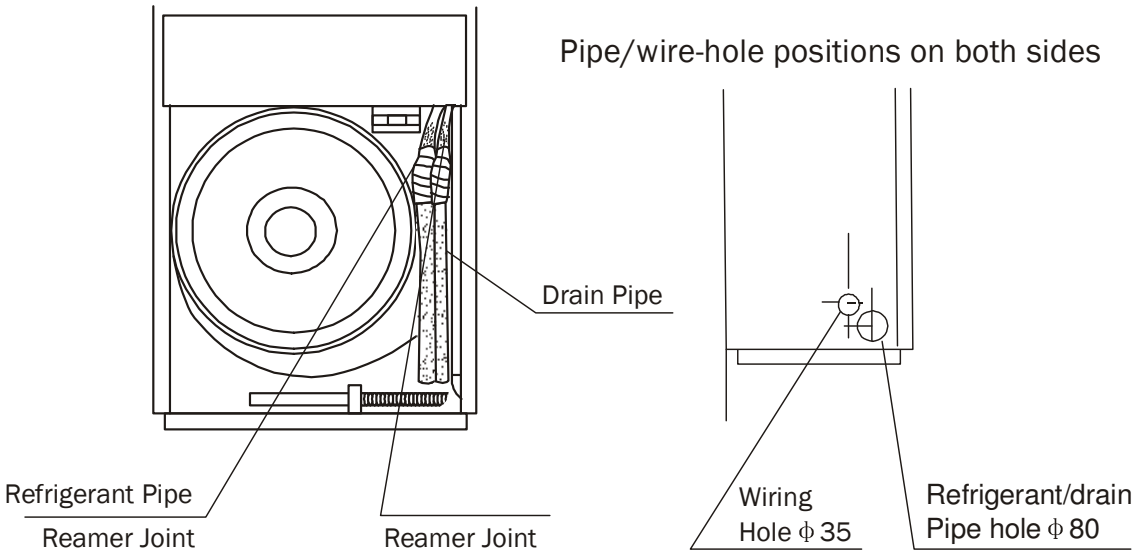
Please take off the air-inlet grid before connecting the pipes/wires.

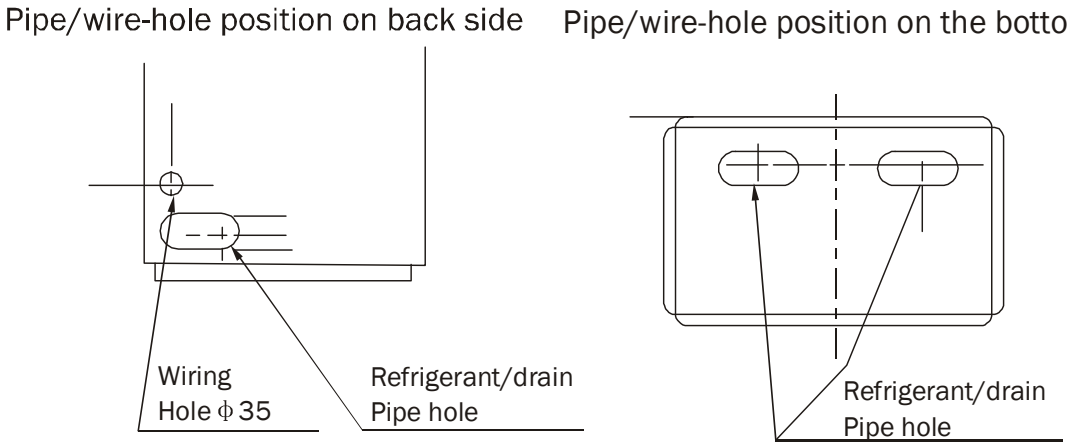
Pull down the two knobs on the grid, take off the two screws, then the air-inlet grid goes free.



6.2.3 Take the Pipe Clip off before connecting the pipes and wiring; fit it when these finished.

Use accessories 4 and 9 to connect the pipes/wires on both sides and back side.





6.2.4 Ship the a/c to the installation place originally packed;

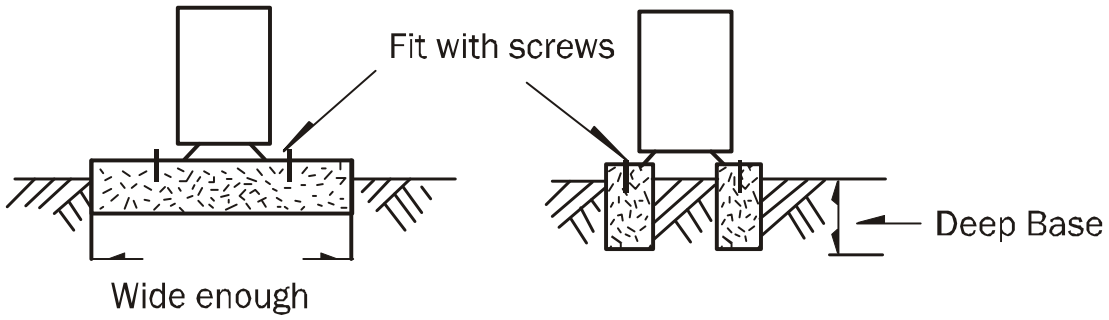
Be careful while hanging the unit because the center of gravity of the unit is not centralized;

Do not make the angle of inclination more than 45 degrees while shipping;(Avoid horizontal storage)

Be sure the electric insulation work is well done if installed on metal ceiling / wall.

Fix the unit feet with bolts (M10/M8). Be sure the unit is fixed strongly enough to against blast or earthquake.

Make a concrete basement to the unit by the above references.

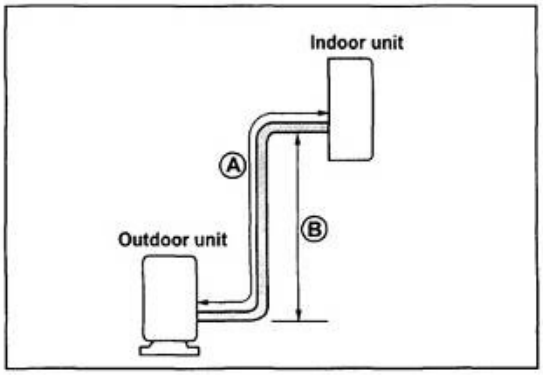


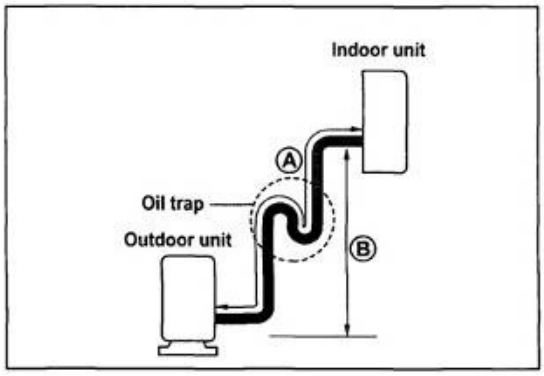
6.3 Refrigerant pipe connecting

6.3.1 Pipe length and the elevation

The correct refrigerant quantity filled in the 5-meter-long pipe of the outdoor unit is marked on the Product Data Plate. If you have to use longer pipe for every meter plus pipe, the refrigerant should be added according to the following calculation.

Capacity	Pipe size		Standard length	Max.	Max.	Additional
			(m)	Elevation	Elevation	refrigerant
Btu/h	GAS	LIQUID		B (m)	A (m)	(g/m)
24K	5/8" (φ16)	1/4" (φ9.53)	5	10	20	65
48K	3/4" (φ19)	1/2" (φ12.7)	5	15	30	90





6.3.2 Piping connection

6.3.2.1 Connecting Of Refrigerant Pipe

a. Only the correctly installing of indoor and outdoor unit done, can the refrigerant pipe be connected.

b. The cut-off valves are completely close before ex-work. Before connecting the refrigerant pipe, be careful to check whether the valves are completely close.

c. The connecting procedure of refrigerant pipe: first, unscrew the two valves on the outdoor unit and the pipe-jointing nut on the indoor unit(please keep them care fully). Please connect the refrigerant pipe according to the manual, the pipe-jointing nut should be screw tightly and no leakage. Note: you need two wrenches to make balance.

d. When the connecting of refrigerant pipe is finished, before power on the system, you should

vacuum the indoor unit through the maintenance port on the cut-off valves, or open the high-pressure valve, and exhaust the air through the maintenance port on the low-pressure valve(closed). It will take about ten seconds. Then screw tightly the maintenance port. (When supplement the refrigerant, fill through the maintenance port of the low-pressure valves on the outdoor unit).

e. Open all the valves completely before power on the system, or it will be sick for low efficiency.

f. Gas leak check. Make sure no gas from connections with leak detector or soap water.

6.3.2.2 Using bronze pipe selling in market

Completely shut the cut-off valves of the outdoor unit (as ex-work status). After the refrigerant pipe has been connected with both the indoor and outdoor unit, let the air exhaust out from the maintenance gap on he low-pressure cut-off valves of the outdoor unit. Screw the nuts tightly on the maintenance gap after the air has been drained.

6.3.2.3 To make the refrigerant pipe unblocked completely

you should keep the cut-off valves of the outdoor unit completely open after you have finished the above steps (step1) or step 2))

Note: Before screwing the reamer nut, smear the pipe and the connecting surface with refrigerant oil; Check and make sure there is no leakage by soap-water or leakage-checker after connecting;

Be sure the connecting joint on the indoor side is insulated.

Use two wrenches to connecting the pipes.

Tubing size	Torque
9.52	3270~3990N.cm(333~407kgf.cm)
12.7	4950~6030N.cm(504~616kgf.cm)
16	6180~7540N.cm(630~770kgf.cm)
19	9720~11860N.cm(990~12106kgf.cm)

6.3.3 Air Purging

When Using the Vacuum Pump

(For method of using a manifold valve, refer to its operation manual.)

a. Completely tighten the flare nuts, A, B, C, D, connect the manifold valve charge hose to a charge port of the low-pressure valve on the gas pipe side.

b. Connect the charge hose connection to the vacuum pump.

c. Fully open the handle Lo of the manifold valve.

d. Operate the vacuum pump to evacuate. After starting evacuation, slightly loose the flare nut of the Lo valve on the gas pipe side and check that the air is entering.(Operation noise of the vacuum pump changes and a compound meter indicates 0 instead of minus)

e. After the evacuation is complete, fully close the handle Lo of the manifold valve and stop the operation of the vacuum pump. Make evacuation for 15 minutes or more and check that the compound meter indicates -76cmHg (-10x106Pa).

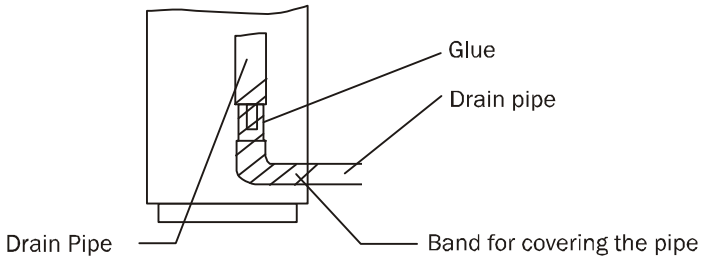
f. Turn the stem of the packed valve B about 45 counterclockwise for 6~7 seconds after the gas coming out, then tighten the flare nut again. Make sure the pressure display in the pressure indicator is a little higher than the atmosphere pressure.

g. Remove the charge hose from the low pressure charge hose.

h. Fully open the packed valve stems B and A.

i. Securely tighten the cap of the packed valve.

6.4 Drain Pipe of The Indoor Unit



Make sure the drainpipe is connected to the outdoor side downward;

The hard polyvinyl chloride(PVC)plastic pipe (external diameter 26 mm) sold is the market is suitable for the attached soft drain pipe;

Please connect the Soft Drain Pipe with the Drain Pipe, then fix it with band;

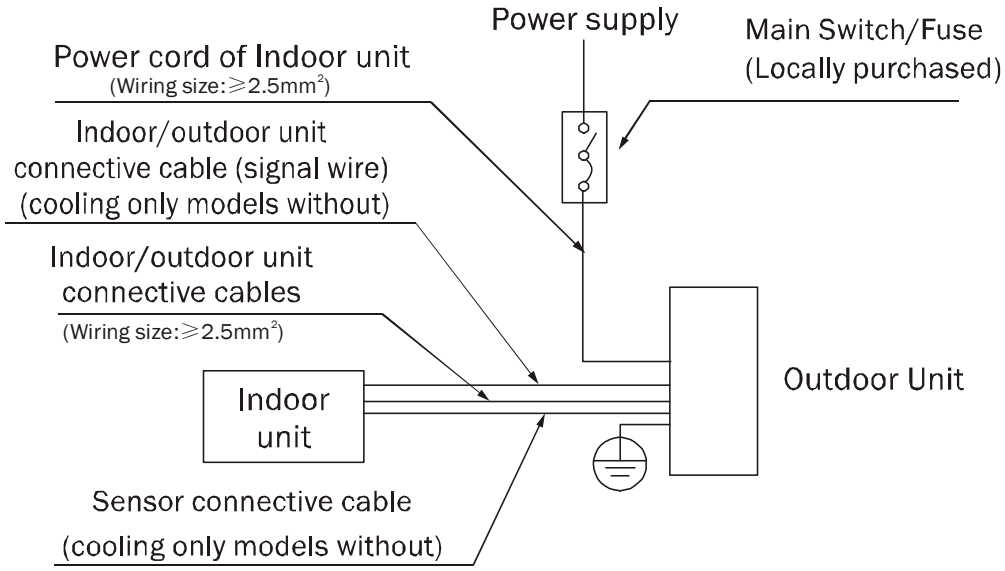
If you have to connect the Drain Pipe indoors, to avoid condensing caused by air intake, you must cover the pipe with heat-insulation material (polyethylene with Specific Gravity of 0.03, at least 9 mm in thickness), and use Glue Band to fix it.

After the Drain Pipe has been connected, please check if the water drains out of the pipe efficiently and has no leakage.

Refrigerant pipe and Drainpipe should be heat-insulated to avoid condensing and water-dropping later on.

6.5 Wiring

Please refer to the Wiring Diagram.



Note: Some models is equipped with a cord having a plug, So a wall outlet shall be properly installed.

6.6 Test operation

Perform test operation after completing gas leak and electrical safety check. The test operation time should last more than 30 minutes.

1). Open the panel and lift the panel up to angle which remains fixed. Do not lift the panel any further when it stops with a "click"sound.

2). Press the manual switch button twice until the operation indicator lights, the unit will operate on Manual Cool mode.

3). Check if all the functions work well while testing the air conditioner. Especially check whether the drainage of indoor unit is smooth or not.

4). Press the manual switch button again till the operation indicator turns dark after finishing the test operation and the unit stops operation.

7 Electronic function

7.1 Performance Index

No.	Item	Index
1	Applicable Voltage Range	185-253V, 342-418V
2	A/C Frequency	50Hz
3	Working environment temperature	-7℃- +45℃

7.2 Main data Introduction

Ts : Set temperature,

T1 : Room temperature

T2: Evaporator pipe temperature

7.3 Operation Modes and Functions

7.3.1 Manual Operation

7.3.2 Heating Mode

7.3.2.1 Four-way valve opens at once, while defrosting process closes.

7.3.2.2 Condition for the compressor action: (Ts=set temperature, T1=room temperature)

	Condition	Compressor and outdoor fan
Room temperature up	T1-Ts=0℃	Off
	T1-Ts>-1℃	On
Room temperature down	T1-Ts<-1℃	On
	T1-Ts=0℃	Off

7.3.2.3 Indoor Fan Action

Anytime remote switchover for fan speed among high/low/auto, anti-cold air function takes priority.

Auto fan in heating mode

	Condition	Fan speed
Room temperature up	T1-Ts>-1℃	Low
	T1-Ts<-1℃	Hi.
Room temperature down	T1-Ts<-2℃	Hi.
	-2℃ <T1-Ts <-1℃	Low

Anti-cold air:

Switchover between fan speed and fine tune can be set according to temperature of evaporator pipe (T2).

	Condition	Fan speed
Room temperature up	T2<25℃	Off
	25℃ <T2<32℃	Low
	T2>32℃	Set fan speed
Room temperature down	T2>22℃	Set fan speed
	20℃ <T2<22℃	Low

	T2<20℃	Off

7.3.3 Defrost (only available to heating mode)

7.3.3.1 Defrosting Conditions

Starting Of Defrosting Condition (meet one of the following is ok):

(1)Accumulated compressor operating time when temperature of outdoor heat exchanger coil T3 is below -2℃ reaches up to over 46 minutes.(When T3 is over 20℃, calculate time again.)

(2) Under evaporator high temperature protection, the accumulated time when outdoor fan motor is off and compressor is on reaches up to over 90 minutes .(When T3 is over 20℃, calculate time again.)

High temperature defrosting condition:

Under high temperature protection of evaporator, the time when outdoor fan is shut down but compressor is not has been accumulated for up to 90 minutes.

7.3.3.2 Defrosting Action

Four-way valve, indoor fan, outdoor fan are shut down. Compressor keeps on.

7.3.3.3 Ending Of Defrosting Condition (meet one of the following is ok):

(1)Time of defrosting lasts 10 minutes.

(2)Temperature of outdoor coil T3 is up to 20℃.

7.3.4 Cooling Mode

7.3.4.1 Four-way valve is closed.

If four-way valve is open before the machine enters cooling mode, then four-way valve will be closed at the first time, the compressor starts under the cooling mode.

7.3.4.2 Conditions for the compressor and outdoor fan action (Ts = set temperature)

	Condition	Compressor and outdoor fan
Room temperature up	T1-Ts=0℃	Off
	T1-Ts>1℃	On
Room temperature down	T1-Ts>0℃	On
	T1-Ts=0℃	Off

7.3.4.3 Action of Indoor Fan

HIGH/LOW/AUTO fan can be switched over by your comfort.

Auto fan under cooling mode.

	Condition	Fan speed
Room temperature up	T1-Ts>2℃	Hi.
	1℃ < T1-Ts <2℃	Low
Room temperature down	T1-Ts>1℃	Hi.
	T1-Ts <1℃	Low

7.3.5 Dehumidifying Mode

7.3.5.1 Indoor fan speed is low.

7.3.5.2 If certain protective condition is met, operation will be carried out.

7.3.6 Auto Mode

7.3.6.1 Under auto mode, the indoor fan is set to be auto.

7.3.6.2 When entering auto mode, the heating, fan only or cooling operation will be automatically chosen according to the room temperature T1 and the set temperature Ts.

Condition	Mode
T1-Ts>1℃	Cooling
-1℃< T1-Ts<1℃	Fan
T1-Ts<-1℃	Heating(fan for cooling only type)

7.3.6.3 After one mode is chosen, if the condition lasts for 15 minutes, meanwhile the compressor doesn't start up within consecutive 15 minutes, the operation mode will be re-chosen according to the T1and Ts.

7.3.6.4 If certain condition is met, then the corresponding protective function will be executed.

7.3.7 Fan Only Mode

7.3.7.1 Under this mode, four-way valve, compressor and outdoor fan are shut down.

7.3.7.2 High/Low/Auto fan can be switched over through manual control. Auto fan will be controlled in line with cooling auto fan with temperature set to be 24C.

7.4 Other Functions

7.4.1 LCD display

Mode, Set temp.,fan speed, time, timer, protection etc.

7.4.2 Timer

The machine should be provided with max. Interval of 24h and min. resolution ratio of 15 minutes.

8 Characteristic of temperature sensor

Temp.℃	Resistance KΩ	Temp.℃	Resistance KΩ	Temp.℃	Resistance KΩ
-10	62.2756	17	14.6181	44	4.3874
-9	58.7079	18	13.918	45	4.2126
-8	56.3694	19	13.2631	46	4.0459
-7	52.2438	20	12.6431	47	3.8867
-6	49.3161	21	12.0561	48	3.7348
-5	46.5725	22	11.5	49	3.5896
-4	44	23	10.9731	50	3.451
-3	41.5878	24	10.4736	51	3.3185
-2	39.8239	25	10	52	3.1918
-1	37.1988	26	9.5507	53	3.0707
0	35.2024	27	9.1245	54	2.959
1	33.3269	28	8.7198	55	2.8442
2	31.5635	29	8.3357	56	2.7382
3	29.9058	30	7.9708	57	2.6368
4	28.3459	31	7.6241	58	2.5397
5	26.8778	32	7.2946	59	2.4468
6	25.4954	33	6.9814	60	2.3577
7	24.1932	34	6.6835	61	2.2725
8	22.5662	35	6.4002	62	2.1907
9	21.8094	36	6.1306	63	2.1124
10	20.7184	37	5.8736	64	2.0373
11	19.6891	38	5.6296	65	1.9653
12	18.7177	39	5.3969	66	1.8963
13	17.8005	40	5.1752	67	1.83
14	16.9341	41	4.9639	68	1.7665
15	16.1156	42	4.7625	69	1.7055
16	15.3418	43	4.5705	70	1.6469

9 Trouble shooting

9.1 Protective Function

9.1.1 3-minute delay for the compressor start-up

At the beginning of energizing or after the stop of the compressor, 3-minute delay will be needed to start the compressor.

When switching over between cooling/heating mode, the compressor stops automatically.

9.1.2 Evaporator protection against high temperature

9.1.2.1 Only available under heating mode.

9.1.2.2 The operation principle is as follows: (T2 = evaporator temperature)

Condition	Outdoor fan	Compressor
T2>56℃	Off	On
T2>62℃	Off	Off
T2<62℃	On	Off
T2<50℃	On	On

Note: During protection, the indoor fan continues operating at a set speed, while the anti-cold air function of heating and the compressor will be 3 minute delayed to shut down for protection.

9.1.3 Evaporator Protection against low temperature

9.1.3.1 Only available under cooling and dehumidifying status.

9.1.3.2 Protection principle:

Condition	Outdoor fan	Compressor
T2<2℃（last 3 minute）	Off	Off
T2>8℃	On	On

9.1.3.3 The restart of the compressor shall execute the delay protection.

9.1.4 Condenser high temperature protection

9.1.4.1 Only available to cooling and dehumidifying mode.

9.1.4.2 Action condition

Condition	Outdoor fan	Compressor
Condenser temp.>62℃	Off	Off
Condenser temp.<48℃	On	On

9.1.4.3 Delay protection should be performed when the compressor restarts.

9.1.5 Outdoor protection

When outdoor protection signal is high level, outdoor unit will perform protection: the whole machine will be shut down while the indoor unit will indicate the corresponding protection signal.

The A/C will recover if outdoor errors are eliminated after the outdoor protection occurs.

9.2 Self-diagnosis

Codes	Contents
P4	Protection of temperature of indoor evaporator
P5	Protection of temperature of outdoor condenser
P9	Protection of defrosting or anti-cold wind
E1	Open-circuit and short-circuit of temperature sensors T1
E2	Temp. sensor T2 on indoor evaporator is open circuit or short circuit

E3	The condenser temperature sensor T3 is open or short
E6	Protection of outdoor unit

9.2.1 LEDs for the indication of outdoor trouble

In normal operation, LEDs emit no light and they will flash at a frequency of 5 Hz when trouble occurs. Their codes are listed in the following table:

LED1	LED2	LED3	Contents
Off	Off	On	Ok
On	Off	On	Phase sequence error
Off	On	On	Overload of current
On	On	On	Lack of phase

9.3 Troubles and Solutions

Before calling for service, please review the following list of common problems and solutions.

If any of the following conditions occur, check your unit and resolve corresponding problems referring to given remediation. If the trouble can't be settled contact our dealer.		
Trouble	Cause	Solutions
Unit does not start	Power failure.	Wait for the comeback of power
	Power switch is open.	Switch on the power
	Fuse of power switch may have blown.	Replace the fuse
	Batteries remote controller are exhausted.	Replace the batteries
	The time is not start-up time you have set.	Wait or cancel the time set.
Air flowing normally with low cooling(heating) effect	Temperature is not set correctly.	Set the temperature properly.
	Door or window is open.	Close door and window.
	Air filter is blocked with dust or dirtiness.	Clean the air filter.
	Inlet/outlet of indoor/outdoor units are blocked.	Clear all blockages.
	Inlet/outlet of indoor/outdoor units are blocked.	Clear the blockage, then restart your operation.
	Be in 3 minutes protection of compressor	Wait

Number	Display code	Problem	What to do
1	E1 E2 E3 E4	Temperature Sensor is off or short-circuit.	Contact service people
2	E6	Outdoor unit protection	Contact service people
3	E8	Electrostatic dust collection	Contact service people
4	P4	The temperature of the evaporator of indoor unit is too low or high (For the protection feature, the compressor turns off automatically)	Turn off the unit, clean the air filter, then restart the unit. If this operation does not work, please contact service people.
5	P5	The temperature of condenser of the outdoor unit is too high (For the protection feature, the compressor turns off automatically)	Turn off the unit, check if there is any obstacle in the air-inlet, otherwise call the service people.
6	P9	Defrosting protection or warm-air controlling is off	The unit will auto restart after finishing the defrosting or the temperature of the Heat Exchanger of indoor unit raise.

Specification

Model			MFJ-24ARN1-QB8	MFJ-48ARN1-RB6
Factory Code			2T004330T031	2T004370T020
Electrical Data				
Power supply		Ph-V-Hz	1φ,220-240V,50HZ	3φ,380-420V,50HZ
Capacity	Cooling/Heating	Btu/h	24000/27000+7200	46000/49000+12000
Power consumption	Cooling/Heating	W	2500/2450+2100	5200/5100+3500
Rated current	Cooling/Heating	A	12/11.5+9.6	8.6/8.5+5.6
EER	Cooling/Heating	Btu/w.h	9.5/10.9	8.9/10.2
System data				
Refrigerant type		g	R410A/2000	R410A/4500
Design pressure		MPa	4.2	4.2
Air flow		m3/h	1100	1750
Noise level	Indoor	dB(A)	48	50
	Outdoor	dB(A)	60	62
Dimension&Weight				
Indoor	Dimension (W*H*D)	mm	500x1700x290	540x1825x410
	Packing (W*H*D)	mm	615x1805x415	655x1935x555
	Net/Gross weight	Kg	41.5/58.5	58/75
Outdoor	Dimension (W*H*D)	mm	840x695x335	940x1245x360
	Packing (W*H*D)	mm	965x755x395	1018x1380x435
	Net/Gross weight	Kg	60/63	104/115
Refrigerant piping				
Liquid side/ Gas side		mm	Φ9.53/Φ16	Φ12.7/Φ19
Max. refrigerant pipe length		m	20	30
Max. difference in level		m	10	15
Applicable ambient				
Ambient temp		℃	-7-45	-7-45
Application area		m2	40-56	80-112
Compressor				
Compressor	Model		PA290X3CS-4MU1	C-SBN373H8D
	Type		Rotary	Scroll
	Brand		GMCC	Sanyo
	Capacity	Btu/h	24490	48109
	Input	W	2430	4750
	Rated current(RLA)	A	11.4	8.22
	Locked rotor Amp(LRA)	A	61	66
	Thermal protector		UP14SE5145	internal
	Capacitor	uF	50	No
	Refrigerant oil	ml	950	1700
Fan Motor				
Indoor	Model		YDK75-8	YDK120-8T

	Brand		Welling	Welling
	Input	W	164	300
	Capacitor	uF	5UF/450V	6.5UF/450V
	Speed(high/low)	r/min	575/540/440	600/550/480
Outdoor	Model		YDK100-6D	YDK65-6F/YDK65-6
	Brand		Welling	Welling
	Input	W	170	156/148
	Capacitor	uF	5UF/450V	3.5UF/450V
	Speed	r/min	900	800